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Reading, Writing and  
Timing — By Les Solomon

RAP — An AI  
Program for Atari



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# ATARI

## Applying The Atari

by Jeff Brenner

Our feature program this month is a long one and will take some time to type in, but I think you'll enjoy it. I had to forcefully pull myself away from playing with it so I could write this month's column. Before we discover what this program is, let's answer some reader mail and take care of a few other matters.

### Reader Mail

Q. I have an Atari 800XL, the *AtariWriter* cartridge and a Gorilla Banana Printer. I understand there is some sort of utility floating around (a driver routine?) that makes the *AtariWriter* cartridge and the Banana more compatible. If you know anything about it, I would appreciate some information.

*Jim Cassoutt  
Pensacola, FL*

Originally, Atari was to distribute these "printer driver routines" for various printers through the Atari Program Exchange. However, the Atari Program Exchange has long been shut down and Atari users have since been complaining that they are unable to get these routines.

But there is still hope. A company called At-A-Glance (86 Ridgegate Avenue, Cedar Knolls, NJ 07927) produces a "Printer Formatted Data Disk," essentially the driver routine you are interested in. The price is \$14.95. The company claims that this program "will give you all the available options possible with your printer and *AtariWriter*." Their ad lists the availability of versions for the following dot-matrix printers: "BMC, C-ITOH, EPSON, GEMINI, LEGEND, OKIDATA, PANASONIC, ATARI, RITEMAN, CITIZEN, plus others." Hopefully, the "plus others" includes your Banana Gorilla.

I recommend that you write a letter to them before ordering to see whether a version is available specifically for your model.

Q. My wife and I have recently gotten involved in doing lineage charts (genealogical trees) of our families and

realized it would be so much simpler to do this on our computer (Atari 800XL).

Somewhere I remember seeing some software just for that purpose, but was disappointed to find it was for a computer other than my Atari. It may have been for a Commodore 64 but I'm not exactly sure of that. However, if you know of one for the Atari, please let me know or ask your readers if they know of such a program.

*Darwin K. Garrison  
Lee's Summit, MO*

Although I have seen several genealogical programs for other computers, I am sorry to say I am not familiar with any available for the Atari. The following companies have produced genealogical software for other computers:

Acorn Software Products, 7655 Leesburg Pike, Falls Church, VA 22043: *Family Tree*.

Array Systems, P.O. Box 295, Brigham City, UT 84302: *Treesearch*.

Comsoft, 655 Maybell Avenue, Palo Alto, CA 94306: *Roots*.

Quinsept, P.O. Box 216, Lexington, MA 02173: *Family Roots*.

Soft-Gene, 11 John Swift Road, Acton, MA 01720: *Ancestry*.

Wagstaff Computer Services, 1050 E. 800 South, Provo, UT 84601: *Family Ties*.

Most of these addresses are more than a year old, and in that time versions might have been developed for the Atari. (Several of these companies have probably gone out of business during this time as well.) I recommend that you write to these companies and ask if an Atari version is available.

You also might be interested in the following companies:

Data Transfer Associates, Inc., 5102 Pommeroy Drive, Fairfax, VA 22032, (703) 938-8490: Publishes bimonthly newsletter, *Genealogical Computing*.

National Genealogical Society's Computer Interest Group, 1921 Sunderland Place, NW Washington, DC 20036.

Posey Enterprises, P.O. Box 338, Orem, UT 84057, (801) 374-6168: Publishes quarterly *Genealogical Computer Pioneer*.

If any readers produce or know of a genealogical pro-

```
>I'M CHECKING TO SEE IF YOU WORK PROPERLY.  
RAP: FOR HOW LONG HAVE YOU BEEN CHECKING TO SEE IF I WORK PROPERLY?  
  
>I'VE JUST BEGUN.  
RAP: TELL ME MORE.  
  
>YOU'RE BEING QUOTED FOR A MAGAZINE.  
RAP: WHY DO YOU THINK I AM BEING QUOTED FOR A MAGAZINE?  
  
>BECAUSE I'M DOING THE QUOTING!  
RAP: IS IT REALLY BECAUSE YOU'RE DOING THE QUOTING?  
  
>YES IT IS.  
RAP: ARE YOU CERTAIN?  
  
>I'M ABSOLUTELY POSITIVE.  
RAP: ARE YOU WORRIED BECAUSE YOU ARE ABSOLUTELY POSITIVE?  
  
>WHAT DO YOU MEAN?  
RAP: WHAT DO YOU THINK DO I MEAN?  
  
>YOU GOT ME - DO YOU MIND IF I PRINT WHAT YOU ARE SAYING?  
RAP: DO YOU THINK I KNOW WHAT I AM SAYING?  
  
>THAT'S TRUE - YOU ARE A COMPUTER PROGRAM.  
RAP: HAVE YOU EVER WANTED TO BE A COMPUTER PROGRAM?  
  
>NEVER!  
RAP: NEVER AT ALL?  
  
>THAT'S RIGHT.  
RAP: THAT IS INTERESTING - GO ON.  
  
>CAN YOU THINK?  
RAP: DO YOU THINK I CAN THINK?  
  
>THAT'S WHAT I AM TRYING TO FIND OUT.  
RAP: WHAT DO YOU THINK YOU ARE TRYING TO FIND OUT?  
  
>I WANT TO SEE IF YOU CAN IMITATE HUMAN INTELLIGENCE.  
RAP: WHAT IF YOU CAN'T GET TO SEE IF I CAN IMITATE HUMAN INTELLIGENCE?  
  
>THEN I MAY GET MAD AT YOU.  
RAP: IT'S UNHEALTHY TO BE ANGRY OFTEN.  
  
>I SELDOM GET ANGRY.  
RAP: WHAT DOES ANGER DO TO YOU?  
  
>I DON'T WANT TO DISCUSS THIS IN FRONT OF MY READERS.  
RAP: ARE YOU SURE YOU DON'T WANT TO DISCUSS THIS IN FRONT OF YOUR READERS?  
  
>ABSOLUTELY SURE - INSTEAD I WANT TO GO FINISH MY COLUMN.  
RAP: IS THAT WHAT YOU REALLY WANT?  
  
>YES, SO GOODBYE!  
RAP: IT'S BEEN A PLEASURE TALKING WITH YOU.
```

Figure 1  
"Conversation with RAP."

gram for Atari computers, please write and tell us.

Q. I've been having some problems with Atari's customer service. The problem concerns

their form letter and non-response, mostly. I bought a 130XE and I asked them simply how to access the additional

**Continued on page 60**

## Tinka's Mazes

A Review by Jeff Brenner

Tinka's Mazes is one of the newest releases in Mindscape's Tink!Tonk! line of educational software. This program concentrates on developing basic mathematics skills, such as counting and addition. Like the other programs in the Tink!Tonk! series, Tinka's Mazes has demonstrated itself to be not only a valuable educational tool for the four- to eight-year old, but a charmingly entertaining piece of software as well.

### Getting Ready for School

In Tinka's Mazes, your child uses the joystick or keyboard to control Tinka, a small, colorful character from TinkTonk Land. After a lengthy introduction, Tinka's bedroom is

displayed complete with Tinka sleeping in bed in the center of the room. Pressing the space bar awakens Tinka, and the animated character jumps out of bed and races off to school. But there are two ways for Tinka to get to school, and your child has the choice: Tinka can go directly to school or through a maze of mathematics problems. Successfully navigating through the maze brings Tinka to school.

### Skill Levels

As an educational program, one of the nicest features of Tinka's Mazes is its multiple difficulty levels. Three skill levels are on the first side of the disk, and an additional skill level is on the back. These help to ensure that your child will

not quickly outgrow the program; as the child becomes more proficient at the skills presented, he can advance to the next difficulty level.

Level one deals with "less" and "more" problems. Two quantities of objects are displayed and the child is asked to choose which is more or which is less.

Level two concentrates on counting skills. Generally, a certain number of items are presented on the screen and the child is asked to type in the number that follows.

Level three presents additional counting problems and also drills your child on simple addition problems.

Level four contains varying skill levels within itself. This level basically drills your child on addition problems but a time aspect is added to the

game. The child must finish the maze in a certain amount of time to gain points and to advance to a higher grade level at the school.

### Through The Maze

If your child chooses to go through the maze, he will have to open "gates" to make his way to the end while avoiding the fast-moving "mazers" (on Level 4). A gate is opened by moving the Tinka character on top of it and answering the mathematics problem presented. Depending on the skill level being played, a "more" or "less" problem, a counting problem, or an addition problem will be presented using animal characters. On level three, for example, a

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## Applying The Atari Continued from page 59

memory that they have advertised and how to use it with their AtariWriter program. The reason I bought a 130XE was because I wanted the additional memory to keep more pages at a time in the computer. They sent me a form letter with the address of Atari associations in my area and no further response. I really got upset at that point and wrote a letter to the president and told him that I thought their "there's 130K available but you can't use it" philosophy was false advertising and Consumer Reports and the Federal Trade Commission ought to know about it. I got another "the user associations in your area are as follows:" form letter about one month later--really user-unfriendly if you compare this with their former helpfulness.

So much for preamble. Can you help me--how do you get the full 130K. I don't understand their instructions in their manual.

Terry Joslin  
Oakton, VA

It is unfortunate that it is so difficult to correspond with Atari, but you are one of the lucky ones. Many readers have complained that they have not received any response--not even a form letter. Ironically, calling Atari by phone gives a recording which tells the caller that the phone lines are too busy and suggests that the caller mail in his question. I had hoped that once Atari settled down with its new management, its toll-free "help" line would be set up again. But the new Atari has apparently remained negligent in the area of consumer support and I do hope this changes in the future.

Regarding your questions about the 130K RAM in the 130XE, the full 130K is indeed in your machine and 64K of it can be used as a RAM "disk drive." You can save data or programs to this area and then access them when desired. I intend to cover various aspects of Atari's newer computers in a future column.

Since AtariWriter was not designed with the 130XE in mind, it cannot access the additional memory. Therefore you must wait until a word processor is released that is compatible with the 130XE. As of this writing I know of no 130K word processors for the Atari 130XE, but will inform you if I hear of one being developed.

### Newsletters

I recently received two more

well-designed newsletters from Atari user's groups. One is *Pokey*, printed by the Western New York Atari User's Group (P.O. Box 59, Buffalo, NY 14216). The other is *Bits, Bytes & Pieces Computer Digest* printed by the Bits, Bytes, & Pieces Atari user's group (1103 Arrowbend Drive, Williamson, NY 14589). If your user's group prints a regular newsletter, send it in and I'll try to mention it.

### Contributions

Readers are invited to submit short, original programs from which others may benefit. All readers whose contributions are printed will receive 3-D holograph stickers. Additionally, this month I have two cartridge games from Sega and from Epyx for the best original programs that are received and published. If you have any nifty little programs of your own creation that others will enjoy, send them in!

### Numeric Keypad Decoder

Several readers have requested an assembly listing of July's numeric keypad program. It is listed under the "Numeric Keypad Decoder Assembly Listing" heading for those who want to modify it for use with machine language programs, or for those simply interested in seeing more clearly how it works.

### Mailing List Update

I've gotten such a fantastic response to June's *Mailing List* program from readers who are using it that we'll begin adding more features to this program next month to make it even more practical. So far only one minor bug has surfaced. When searching for a name that does not exist, an error message will be generated. Add the following line:

935 TRAP 1000

This will cause the program

#### NUMERIC KEYPAD DECODER ASSEMBLY LISTING

```

10  *=#600
20 ; NUMERIC KEYPAD DECODER
30 ; (C) 1985 JEFF BRENNER
40 PORTA=$4016
50 POT1=$3761
60 TRI60=$3324
70 SETVBV=$58460
80 XITVBV=$58466
90 C#=764
0100 FLAG=204
0101 PLA
0120 LDX #START/256 ; Load X with high byte of START.
0130 LDY #START%255 ; Load Y with low byte of START.
0140 LDA #7
0150 JSR SETVBV ; Set vectors to point to START address.
0160 RTS ; Return to BASIC.
0170 START LDX TRI60 ; IF TRI60=0 then key has been pressed.
0180 BEQ PRESSED ; Otherwise key is released - store zero in FLAG.
0190 DEX ; Jump to end.
0200 STX FLAG ; If FLAG=0 then last key has been released.
0210 JMP END ; Ready to read next key.
0220 PRESSED DLA FLAG ; Cannot read key yet - Jump to the end.
0230 BEQ READKEY ; Set flag to non-zero value since key is pressed.
0240 BNE END ; Check which key is pressed.
0250 READKEY INC FLAG
0260 LDA PORTA
0270 AND #15
0280 TAX
0290 LDA POT1 ; Check if ESCAPE pressed.
0300 CMP #1
0310 BEQ NOESC ; If POT1=1 then ESCAPE was not pressed.
0320 LDX #16 ; Load X with offset for ESC key.
0330 NOESC LDA DATA,X ; Get data determined by X offset.
0340 STA CH ; Store data in keyboard code register.
0350 END JMP XITVBV ; Exit vertical blank routine.
0360 DATA .BYTE 0 ; Data for keys stored after this address.
0370 .END

```

to print a "Name not found" message instead, and will allow you to continue. Some readers who have requested diskettes of this program will find that this line has already been added to the program.

### Response Analysis Program

Now the program that we've all been waiting for. It's called the *Response Analysis Program*, or *RAP* for short. It requires a minimum of 24K RAM.

Inspired by the program, Eliza, which was created at the Massachusetts Institute of Technology way back in 1966, *RAP* will sometimes startle you with apparently intelligent responses to your statements, or will make you laugh with its hilarious retorts. Eliza was a computer psychotherapist; *RAP* is the center of a rap session. Some have found that "talking" to such a program (as ridiculous as it sounds) has actually helped them to relieve some pressures and tensions.

*Figure 1* gives you an idea of what *RAP* is all about. This is a sample conversation between me and the program. My entries are preceded by ">" while the program's responses are preceded by "RAP::." You can obviously have a lot of fun with this program.

The program has been divided into two parts, *Part I* (lines 10 through 1350) and *Part II* (lines 4960 through 5590) both with the heading, "Response Analysis Program." *RAP* is a long program, so you might want to enter it in over a period of several days. It's a good idea to use *Program Perfect* to enter this program to avoid making errors which will affect its operation. (See the end of this article for information on *Program Perfect*.)

Type in both parts of *RAP*. If you are using *Program Perfect*, first enter Part I. Then list this part to cassette or disk (LIST "C:") or LIST "D:PART1"). Now type NEW and reload *Program Perfect*.

Type 4960 for the "Starting line" prompt and begin entering Part II. When this part is completed, merge Part I with it by entering Part I from cassette or disk (ENTER "C:") or ENTER "D:PART1"). Now the entire program will be in memory, and you can SAVE it

#### RESPONSE ANALYSIS PROGRAM - PART I

```

10 REM RESPONSE ANALYSIS PROGRAM
20 REM COPYRIGHT 1985 JEFF BRENNER
30 DIM SUM$(128):LAST$=0$;PRINT "STAND BY...":DELAY=5
40 TRAP 50:RESTORE LAST:READ SUM$:LAST=LAST+1:$GOTO 40
50 KEYS=INT(LAST/10)-501
60 DIM INPS$(128),RAP$(128),REV$(100),OLD$(128),SP$(10),M$(7),FIND$(77)
70 DIM TMP$(128),V1$(28),V2$(28),REF$(KEYS),KEY$(28)
80 RESTORE 90:FOR I=1 TO 7:READ M$(I,I)-CHR$(M):NEXT I
90 DATA 32,211,212,193,210,212,32
100 FOR I=1 TO 77:READ M$IF(I,I)=CHR$(M):NEXT I
110 SP$(1)=CHR$(32):SP$(19)=CHR$(32):SP$(2)=SP$
120 REF$(1)=CHR$(8):REF$(KEYS)=CHR$(8):REF$(2)=REF$
130 POKE 295,2:POKE 294,0:POKE 296,8
140 DATA 104,104,133,284,104,133,284,104,133,284,104,133,284,104,133,284,104,133
150 DATA 298,133,212,133,213,168,8,177,284,281,155,288,249,134,132
160 DATA 298,168,8,177,284,281,155,249,31,289,286,288,8,288,196,288
170 DATA 298,241,230,212,96,24,165,284,185,1,133,264,165,285,185,0
180 DATA 133,295,236,212,168,8,246,219,169,8,133,212,96
190 RESTORE 210:FOR I=1 TO 47:READ N:POKE 1535+I,N:NEXT I:A=USR(1572)
200 POKE 294,8:POKE 296,8
210 DATA 72,169,8,141,182,2,169,4,141,198,2,230,204,165,284,197
220 DATA 296,298,13,169,8,133,284,169,2,229,285,153,285,141,243,2
230 DATA 104,76,98,228,104,162,6,168,8,169,7,32,92,228,96
240 L=0:K=0:GRAPHICS 5:SETCOLOR 2,0,0:COLOR 1
250 OX=1:DY=38:RESTORE 380:PLOT OX,DY:FOR I=1 TO 37:READ X,Y:FOR J=0 TO 4
260 IF I=15 OR I=24 OR I=29 THEN PLOT X,J,Y:DY=X:GOTO 290
270 PLOT OX+J,OY:DRANTO X,J,Y
280 IF PEEK(53279)<6 THEN SOUND 2,0,0,0:SOUND 3,0,0,0:GOTO 370
290 M+=I+J:SETCOLOR 0,I,B
300 SOUND 0,M,18:BSOUND 1,M$2,10,B:BSOUND 2,M$3,10,B:BSOUND 3,M$4,10,B
310 POKE 53768,1
320 NEXT J:OY=X|OY=Y:NEXT I:L=I+37:SOUND 2,0,0,0:SOUND 3,0,0,0
330 SOUND 155,10,B:BSOUND 1,254,10,B:POKE 53768,1
340 PRINT SP$(8);":RESPONSE":SP$(7);":ANALYSIS":SP$(7);":PROGRAM"
350 POKE 752,1:POKE 656,3:POKE 657,10:PRINT "PRESS #H TO BEGIN";
360 FOR I=0 TO 15:SETCOLOR 0,I,B:IF PEER(53279)<>6 THEN NEXT I:GOTO 360
370 SOUND 0,0,0,0:SOUND 1,0,0,0:OPEN #1,"E":GOTO 540
380 DATA 11,39,9,34,5,23,4,14,5,6,10,2,28,4,28,10,19,17,9,21
390 DATA 7,22,13,24,28,28,24,33,31,39,31,36,30,27,28,17,28,8,33,5
400 DATA 35,46,13,45,23,46,34,47,37,43,23,48,23,32,25,37,38,57,29
410 DATA 53,15,47,7,48,2,55,1,67,5,67,12,58,18
420 POKE 559,34:IF T=200 THEN 460
430 PRINT "#2:RAP":#1:FOR I=1 TO LEN(RAP$):NEXT I
440 IF RAP$(I,I)<>> THEN PRINT "#2:RAP$(I,I)":GOTO 450
450 NEXT I:PRINT "#2:PRINT #2"
460 RAP$(LEN(RAP$)+1)=CHR$(32)
470 C=0:FOR I=1 TO LEN(RAP$)
480 FOR J=0 TO LEN(RAP$)-1:IF RAP$(I+J,I-J)<CHR$(32) THEN NEXT J
490 C=C+1:IF C>38 THEN PRINT CHR$(126):C=J
500 FOR K=1 TO I+J:PRINT 0,I,8,B:BSOUND 0,0,0,0
510 IF RAP$(K,K)<>> THEN PRINT RAP$(K,K);
520 FOR D=1 TO DELAY:NEXT D:NEXT K
530 I=I+1:NEXT I:PRINT :RETURN
540 CLOSE #2:PRINT "WOULD YOU LIKE A PRINTOUT (Y/N)":INPUT TMP$:P=0
550 IF TMP$=(1,1)<>> Y THEN 580
560 P=1:TRAP 576:PRINT "TURN PRINTER ON.":OPEN #2,8,0,"P":GOTO 580
570 PRINT "PRINTER NOT READY.":GOTO 580
580 RAP$="I'M RAP.":GOSUB 420:RAP$="TALK TO ME BUT ANSWER IN ONE"
590 RAP$(LEN(RAP$)+1)=" SENTENCE AT A TIME.":GOSUB 420
600 RAP$="WHEN YOU SEE THIS PROMPT.":RAP$(LEN(RAP$)+1)=CHR$(27)
610 RAP$(LEN(RAP$)+1)=CHR$(127)
620 RAP$(LEN(RAP$)+1)=CHR$(127),TYPE IN YOUR WORDS AND PRESS RETURN.":GOSUB 420
630 PRINT "IF P=1 THEN P=2"
640 IF LEN(KEY$)>3 THEN IF KEY$(1,3)="BYE" THEN POKE 752,0:END
650 TRAP 1190:POKE 752,0:PRINT CHR$(27);CHR$(127);:OLD$=INPS$:INPUT #1;INPS
660 IF P THEN PRINT "#2";":INPS
670 POKE 755,0:IF LEN(INP$)<7 THEN 690
680 IF INP$(1,6)="SPEED=" THEN DELAY=VAL(INP$(7,LEN(INP$))):GOTO 1170
690 IF INP$=OLD$ THEN 1140
700 TMP$=INP$(LEN(INP$))
710 IF TMP$=<"A" OR TMP$=>"Z" THEN INP$=INP$(1,LEN(INP$)-1)
720 TMP$=CHR$(32):TMP$=INP$(LEN(TMP$)+1)=INP$:INP$=TMP$
730 INP$(LEN(INP$)+1)=CHR$(32):INP$(LEN(INP$)+1)=CHR$(155)
740 POKE 752,1:PRINT INP$(LEN(INP$)+1)=SP$:LN=LEN(INP$):TOT=0
750 IF INP$(1,1)=CHR$(127) THEN INP$=INP$(2,LEN(INP$))+LN=LN-1
760 FOR D=1 TO LN-1:TOT=TOT+ASC(INP$(D,D))
770 IF INP$(D,D)=CHR$(39) THEN INP$(D)=INP$(D+1,LN):LN=LN-1:D=D+1
780 NEXT D
790 IF INP$=OLD$ THEN 1140
800 IF INP$(5,5)<>"K" THEN 820
810 IF TOT=1089 AND LEN(INP$)=21 THEN 1160
820 AA=300:KEY$=0:READ KEY$:#1:FOR KEY=1 TO KEYS-1
830 READ KEY$:IF KEY$="0" AND KEY$="9" THEN LINE=VAL(KEY$):GOTO 830
840 KEY$(LEN(KEY$)-1)=CHR$(155):NM=0
850 AA=USR(ADR(FIND0),ADR(240),ADR(KEY$)):POKE 205,2:POKE 204,0:POKE 206,8
860 IF A AND NM OR INT(RND(.03))<3 THEN 890
870 NM=A+1:LEN(KEY$)-1=AKEY:ALINE=LINE:NM=1
880 IF A#0 OR INT(RND(.03))<3 THEN 890
890 AA=A+1:LEN(KEY$)-1=AKEY:KEY$=ALINE:NM=1
900 READ KEY$:IF KEY$="0" OR KEY$="9" THEN 840
910 LINE=VAL(KEY$):NEXT KEY
920 IF AKEY>THEM A=A#KEY:KEY$=ALINE
930 RESTORE 4960:REVS=INP$(A)
940 FOR I=1 TO 20 READ TMP$:V28:V1$=CHR$(32):V1$(LEN(V1$)+1)=TMP$
950 V1$(LEN(V1$)+1)=CHR$(32):V1$(LEN(V1$)+1)=CHR$(155)
960 V28*(LEN(V28)+1)=CHR$(32)
970 B=USR(ADR(FIND0),ADR(240),ADR(V1$)):POKE 205,2:POKE 204,0:POKE 206,8
980 IF B#0 THEN NEXT I:GOTO 1020
990 OLD$=REV$(B+LEN(V1$)-1)
1000 REV$=REV$(B+1):REV$=LEN(REV$)+1=V28:REV$=LEN(REV$)+1=OLD$:
1010 GOTO 970
1020 IF LEN(REV$)<2 THEN 1060
1030 I=ASC(REF$(LEN(REV$)))
1040 IF I=155 OR I=32 THEN REV$=REV$(1,LEN(REV$)-1):GOTO 1020
1050 IF REV$(1,1)=CHR$(32) THEN REV$=REV$(2,LEN(REV$)):GOTO 1040
1060 L=ASC(REF$(KEY$))
1070 RESTORE LINE+1:READ OLD$:
1080 L=L+1:I=PEEK(183)+256+PEEK(184):IF I>LINE+9 THEN L=0:GOTO 1070
1090 REF$(KEY,KEY$)=CHR$(L)
1100 IF ASC(OLD$(LEN(OLD$)-1))<>43 THEN RAP$=OLD$:GOSUB 420:GOTO 630
1110 RAP$=OLD$(1,LEN(OLD$)-2):RAP$(LEN(RAP$)+1)=CHR$(32)
1120 RAP$(LEN(RAP$)+1)=REV$:
1130 RAP$(LEN(RAP$)+1)=OLD$(LEN(OLD$)):OLD$=RAP$:GOSUB 420:GOTO 630
1140 RAP$="YOU ARE REPEATING YOURSELF."
1150 GOSUB 420:GOTO 630
1160 RAP$="SAME TO YOU, BUSTER!":GOSUB 420:GOTO 630
1170 RAP$="SPEED NOW AT ":"RAP$(LEN(RAP$)+1)=STR$(DELAY)
1180 GOSUB 420:GOTO 630
1190 TRAP 1190:KEY$=RESTORE 1350:READ LINE,TMP$:GOTO 1060
1200 DATA 5600,0,YOU,YOU,ARE,5610,1,AM,IM,5620,CAN,YOU,5630,CAN
1210 DATA 5640,0,ARE,YOU,5650,WOULD,YOU,5660,WHY,DONT,YOU,5670,WHY
1220 DATA 5680,WHY,CANT,I,5690,I,DONT,5100,I,CANT,5110,I,WILL,NOT,I,WONT
1230 DATA 5120,I,WILL,5130,I,COULDNT,5140,I,FELL,5150,I,THINK
1240 DATA 5160,I,WANT,5170,I,WANT,5180,I,LIKE,5190,I,LOVE,5200,I,WOULD
1250 DATA 5210,I,HATE,5220,WHO,5230,WHAT,5250,WHEN
1260 DATA 5260,WHEN,5270,WHY,5280,NEVER,5300,SOMETIMES
1270 DATA 5310,USUALLY,5320,ALWAYS,5330,MASSIE,5340,CAUSE
1280 DATA 5350,YES,5360,NO,5370,SAD,5380,HAPPY,5390,ANGRY,5400,MAD
1290 DATA 5400,SICK,5410,SCARE,5420,DREAM,5430,PROBLEM,5440,LOVE
1300 DATA 5450,DOCTOR,BOSS,WHITE,5460,CHILD,SPouse,FATHER,MOTHER
1310 DATA 5460,FAMILY,KIDS,5470,MOVIE,5480,BOOK
1320 DATA 5490,POLITICAL,5500,MUSIC,5510,SPORT,5520,MONEY,5530,COMPUTER
1330 DATA 5540,DEATH,5550,JOB,WORK,5560,SCHOOL
1340 DATA 5570,BYE
1350 DATA 5580,#
```

to cassette or disk (CSAVE or SAVE "D:RAP.BAS"). You can also delete the Part I file from disk once you have saved the completed program.

RUN the program. The first display is the title screen,

Continued on page 104

**Tinka's Mazes**

Continued from page 59

group of animals marches onto the screen and the program asks, "HOW MANY?" After answering this question, some more animals appear on the screen and the program asks,

**Applying The Atari**

Continued from page 60

designed with the help of a slightly modified version of last month's light pen program. You can press *START* at any time while this screen is being drawn to get to the next screen. Here you are asked if you want to record your conversation on

"NOW HOW MANY?" On all the skill levels, a correctly answered question is greeted with a high-pitched beep, while an incorrect answer is met with a low-pitched buzz and a "TRY AGAIN" prompt. If the child incorrectly answers two times in a row, the correct

a printer. It can be tremendously entertaining to look back at an entire conversation. Type *Y* or *N* for this prompt. If you don't have a printer, of course, you cannot get a printout--sorry.

Now *RAP* will give you a few introductory statements and will display the triangle prompt for your input. You

answer is displayed.

A correct answer opens the gate and allows the child to proceed through the maze. It is necessary to pass through nine of these gates for Tinka to get to school.

**At School**

The school part of Tinka's

can say whatever you like; discuss a problem, talk about your fears, ask questions about the program itself, etc. *RAP* will do its best to respond to your statements. Remember, though, that *RAP* is just a computer program, so be forgiving with its occasional awkward grammatical use. There are a few "rules" to know when using *RAP*.

Mazes is almost a whole new program in itself. Your child can choose to stay in the classroom and take a mathematics quiz, or to go on a field trip on which skill reinforcing games are played.

The quiz is taken on a "blackboard" on the screen.

First, answer in one sentence at a time. Longer sentences are preferable since they give *RAP* more to work with. Unlike other BASIC artificial intelligence programs, there will not be any significant increase in the amount of time the program takes to respond with longer sentences. Since *RAP* uses a machine language subroutine to search your input

**RESPONSE ANALYSIS PROGRAM - PART II**

```

IK 4968 DATA ARE, AM, WERE, WAS/, YOU, I/, YOUR, MY/, IVE, YOU'VE, IM, YOU'RE, ME, YOU/
ILJ 4970 DATA AM, ARE/, WAS, WERE/, I, YOU/, MY, YOUR/, YOUE, I'VE, YOURE, I'M, YOU, ME/
KJL 4988 DATA OUR, YOUR/, ME, YOU/, YOURSELF, MYSELF/, MYSELF, YOURSELF/
KJW 4998 DATA YOURS, MINE/, MINE, YOURS/
EBA 5000 DATA WHY DO YOU THINK I AM+?
RTA 5001 DATA HAVE YOU EVER WANTED TO BE+?
CTA 5002 DATA DO YOU REALLY BELIEVE THAT I'M+?
EPG 5003 DATA DO YOU KNOW ANYONE ELSE WHO IS+?
RTA 5010 DATA FOR HOW LONG HAVE YOU BEEN+?
HWA 5011 DATA ARE YOU WORRIED BECAUSE YOU ARE+?
NSA 5012 DATA DO YOU LIKE THAT YOU ARE+?
TFA 5013 DATA ARE YOU HAPPY THAT YOU ARE+?
UZA 5020 DATA DO YOU THINK I CAN+?
RTA 5021 DATA WHAT MAKES YOU WANT TO KNOW IF I CAN+?
DMH 5022 DATA ARE YOU ABLE TO+?
UOA 5030 DATA WHY WOULDN'T YOU BE ABLE TO+?
IMB 5031 DATA ARE YOU SURE YOU REALLY WANT TO+?
DEH 5032 DATA WHY DO YOU WANT TO KNOW IF YOU CAN+?
YEA 5040 DATA DOES IT REALLY MATTER IF I AM+?
CMR 5041 DATA WOULD YOU BE HAPPIER IF I WERE+?
CMN 5042 DATA DO YOU OFTEN WONDER WHETHER OTHERS ARE+?
GMA 5050 DATA WOULD YOU BE PLEASED TO HEAR THAT I WOULD+?
GIA 5051 DATA I MIGHT JUST+.
BLH 5052 DATA HOW WOULD YOU FEEL IF I WOULD+?
NIA 5060 DATA DO YOU REALLY WANT ME TO+?
VLA 5061 DATA WHY DO YOU FEEL THAT I DON'T+?
OSH 5062 DATA IT IS POSSIBLE THAT SOMEDAY I WILL+.
AMA 5070 DATA CAN YOU THINK OF A GOOD REASON WHY YOU SHOULDN'T+?
SMI 5071 DATA HOW OFTEN DO YOU+?
DMA 5080 DATA ARE YOU SURE YOU WANT TO+?
EMA 5081 DATA WHAT MAKES YOU THINK YOU CAN'T+?
VBB 5082 DATA HAVE YOU TRIED TO+?
ISA 5090 DATA ARE YOU SURE YOU DON'T+?
FJA 5091 DATA IN YOUR OPINION, WHY DON'T YOU+?
MNR 5092 DATA DO YOU WANT TO+?
QBG 5093 DATA IS IT IMPORTANT THAT YOU+?
PFA 5100 DATA ARE YOU REALLY TRYING TO+?
TMA 5101 DATA TELL YOURSELF THAT YOU CAN+!
CYH 5102 DATA IS IT SO IMPORTANT FOR YOU TO+?
KYA 5103 DATA WHY WON'T YOU+?
NVI 5111 DATA TELL ME WHY YOU WILL NOT+.
ASA 5120 DATA YOU SEEM QUITE POSITIVE THAT YOU WILL+.
IVI 5121 DATA HOW WILL YOU+?
SMQ 5130 DATA WHY NOT?
AVI 5131 DATA WHAT IF YOU WERE SOON ABLE TO+?
DM 5140 DATA HOW LONG HAVE YOU BEEN FEELING+?
HM 5141 DATA DO YOU WANT TO CONTINUE TO FEEL+?
ALA 5142 DATA HOW ELSE DO YOU FEEL+?
GLG 5143 DATA DO YOU FIND THAT YOU OFTEN FEEL+?
BHA 5150 DATA HAVE YOU ALWAYS THOUGHT THAT+?
TUM 5151 DATA HOW DO YOU FEEL ABOUT THESE THOUGHTS?
HWF 5152 DATA WHAT ELSE DO YOU THINK?
EYA 5160 DATA DO YOU REALLY WANT TO+?
NA 5161 DATA ARE YOU SURE YOU CAN+?

```

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The type of quiz given once again depends upon the skill level being played. For example, the child may have to count a number of scissors, rocket ships, books, monsters, and other objects (Level 2), or he may have to add up

Continued on page 105

for key words, both short and long sentences will take approximately the same amount of time to be processed; about seven seconds. But don't go overboard; sentences longer than three lines will not be entered properly. Entering more than one sentence at a time or run-on sentences will make *RAP* more likely to give you a nonsensical response. Note that the screen goes blank while *RAP* thinks. This helps to speed up its response.

Second, *RAP* is more suited to understanding what you feel and what you do. It won't necessarily understand if you talk about what your brother-in-law is doing, for example.

Third, the speed with which *RAP* "types" out its characters can be changed by typing "SPEED = " followed by a number from zero through 30. Zero is the fastest speed and eliminates the "typewriter" effect. Numbers above 30, such as 4000, will make you wait days for a response, so keep the number under 30. *RAP* will print out a confirmation of the new speed. The speed of processing your responses is not affected; only the speed at which the characters are printed is changed.

Fourth, be careful of what you say to *RAP*. Computer circuitry is extremely sensitive. Have fun!

**Next Month**

We'll learn all about the workings of *RAP* and how to add additional key words and responses. We'll also enter a few routines for June's *Mailing List* program, and we'll take a look at some more reader mail.

Reader's questions, comments and original contributions are welcome. Please enclose a self-addressed, stamped envelope (SASE) for a personal reply.

A cassette or diskette of the programs listed in this month's column is available from the author for \$7.00, postpaid. Specify DOS 2 or DOS 3; when requesting a diskette.

Program Perfect is a utility used to check for typing errors in programs entered from this column. Readers may send a SASE for a listing or \$5.00 for a cassette or diskette of this program.

Address all correspondence to:

Jeff Brenner's  
"Applying The Atari 9/85"  
c/o Computer Shopper  
P.O. Box F  
Titusville, FL 32781-9990 ●

# Digital Vision, Inc. Announces Video Acquisition System For Atari Computers

Digital Vision, Inc., announces the introduction of COMPUTERYES, the company's ultra-low-cost video acquisition system for the Atari 800, 800XL, and 130XE series of personal computers. Priced at only \$129.95, COMPUTERYES represents the first cost-effective means of capturing real-world images on the Atari's high resolution graphics display. And for just \$399.95, a complete system including COMPUTERYES

and a high-quality video camera is available.

COMPUTERYES is an innovative slow-scan device that plugs into the Atari's two Game Ports and easily connects to any standard video source (videotape recorder, video camera, videodisk, etc.). Under simple software control, a b/w image is acquired in less than six seconds. A unique multi-scan mode also provides realistic grey-scale images. The accompanying images are

printer screen dumps of images acquired by the system.

Many of the applications of COMPUTERYES are obvious. These include pattern recognition, security, quality control, spatial measurement, robotics and artificial intelligence, industrial controls, computer art, education, and entertainment. Other applications are bound to surface, once the product is in the hands of the creative members

of the personal computer community.

Comprehensive software is provided with the system and includes: machine language, image capture routines; a menu-driven executive that provides everything even first-time users need to capture images; and image save-to-disk capability. Images can be acquired in either Graphics B (high-resolution) Mode or Graphics 7.5 (four intensity level) Mode, and are thus compatible with such popular image processing programs as Atari Artist and the Koala Pad. Support for other packages, such as Print Shop, will be available soon. To encourage application development and promote ease of use, the software is not copy-protected.

The COMPUTERYES

package includes interface module, complete easy-to-use software support on disk, owner's manual, and one year warranty. The system is currently available for the Atari 800/800XL/130XE series, with single- or double-density disk drive. COMPUTERYES is the Atari version of Digital Vision's successful video acquisition system for Apple II series and Commodore 64/128 computers. All products are available for immediate delivery. Versions for other popular computers will be available in the near future.

For further information, please contact: Digital Vision, Inc., 14 Oak Street, Suite 2, Needham, MA 02192, (617) 444-9040 or (617) 449-7160.

Mention that you read about it in the *Computer Shopper*. •

## Tinka's Mazes Continued from page 104

numbers presented on the blackboard (Level 3). On any of the levels, the "teacher" rewards correct answers by doing a dance, and nods disapprovingly when an incorrect answer is given. Getting all ten answers correct makes the teacher dance, jump in the air, or flip her wig.

## Field Trip

On the field trip, the child can select to play one of five animal games, with elephants, mice, bees, crabs, or fish. The games are intrinsically the same except that the animals, and the actions of the animals, are different. Each game exercises the concepts that the particular skill level is trying to reinforce. On level two, for instance, a group of elephants, mice, bees, crabs or fish is displayed and the child is asked "WHAT NUMBER COMES NEXT?" Typing the number that follows the displayed quantity of animals is rewarded with the elephants joining tails, the mice scurrying away at the sight of a cat, the bees buzzing in, the crabs waving their claws, or the fish blowing bubbles.

## Packaging and Documentation

All the Tink!Tonk! programs are packaged in an at-

tractive hard-plastic case. The 24-page documentation booklet is excellently written and thorough, explaining each skill level in a separate section. A "Game Plan" section gives helpful hints on playing the game, and a unique "Off-Screen Activities" section recommends activities you can perform with your child to reinforce the skills presented in Tinka's Mazes.

## Conclusions

My only complaints of Tinka's Mazes concern the several-second loading delay which takes place between screen changes and an occasional annoying repetition of short tunes. Aside from this, Tinka's Mazes is a well-designed educational program. The educational concepts are presented with animated graphics in a game-form that children enjoy. And the varie-

ty of skill levels ensures that your child will get good use out of the program.

## Requires:

Atari 400/800/XLIXE: 48K, disk drive

Commodore 64: Disk drive  
1 Joystick (optional)

Program author:

Mercer Mayer

Price: \$39.95

Warranty:

90 days, free replacement

Manufacturer:

Mindscape, Inc.  
3444 Dundee Road  
Northbrook, IL 60062

## RATINGS FOR TINKA'S MAZES

\* POOR, \*\* FAIR, \*\*\* GOOD, \*\*\*\* EXCELLENT  
Design \*\*\*  
Amusement level \*\*\*  
Documentation \*\*\*\*  
Value \*\*  
Average \*\*\*

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# Page Designer

by Jeff Brenner

\*\*1/2

Page Designer, a new release from XLENT software, allows the user to combine various type fonts and graphics to create signs, report covers, letterheads and the like. Sounds familiar? Shades of Broderbund's The Print Shop? Michael Barnes, Vice President of XLENT Software, says that Page Designer was produced independently of The Print Shop, however, he suggests that my readers might "be interested in a list of features of the \$45.00 Print Shop compared to the \$29.95 Page Designer."

While Page Designer and The Print Shop appear similar from their general descriptions, the differences between the two are great and many. Therefore, one will probably suit your particular needs much more effectively than the other. This review will cover the features of Page Designer and its advantages and limitations when compared with The Print Shop.

## What You See Is What You Get

One of the nicest features of Page Designer is that its display shows you almost exactly what you are going to get on the printed page. There is little need to question about positioning or overlaying characters onto illustrations since you put everything where

you want it. All is not completely marvelous, however, since Page Designer can't fit an entire page onto one graphics screen. It allows you to see and design the whole page by using a top and a bottom screen. You can only view or work with one of these screens at a time, but you can freely go back and forth between the two. I did run into a few problems with

this two-screen design, however, which you shall soon hear about.

## Numerous Type Styles

Included on the Page Designer disk are seventeen character fonts. That's a generous selection, although a few of the fonts look like duplicates of others, with

maybe a few indistinguishable nuances. Unlike the fonts offered by The Print Shop, Page Designer's character sets support lower-case letters.

## Merging Graphics

Here's where Page Designer has another advantage. Screens

**Continued on page 154**

## Weber Systems' Continued from page 148

DOR.BAS and CHECK.BAS for maintaining a file of vendors and generating checks in an account payable package.

Disk #4 contains CUSTOMER.BAS and INVENT.BAS in an accounts receivable package. Product inventory includes a description, stock number, quantity on hand, quantity on order and unit price.

Disk #5 is a mailing list program called FLIPFILE.BAS. It stores addresses and phone numbers, and prints any or all on labels or as a list.

Disk #6 contains a number

of programs. Chart of Accounts (CHARTACC.BAS) holds account name, number and description for up to 1000 entries, sorts them, then prints them as a list or on labels.

PHONE.BAS is a computerized phone directory of addresses and phone numbers, for printing as a list or labels.

BREAK.BAS provides a break-even analysis to determine the price that should be charged for a product, using information you supply. It calculates the number of production units required to crossover from loss to profit-the break-even point.

METRIC.BAS calculates metric conversions, and

FUNCTIONS.BAS provides a wide range of trigonometric and hyperbolic math values.

The appendices include some information from the MBC User's Handbook—a table of character codes and four pages of BASIC error messages, with their meaning and causes.

I have mixed feelings about these programs. I ran MEMOPAD without difficulty, but found FLIPFILE crashed when initialized with the 1600 records the text indicated were allowed. I was able to initialize 1000 records, then found that only three structured lines were allowed per label—with no room for a

company name. Also, the record listing used three lines, just like a label, rather than the single line per record you might expect. I haven't tried the other programs at this writing, but suspect the 1600 records claimed in the text for many programs may not be available with one double-sided 360K disk.

The listings are well commented with remarks and are listed in structured fashion, making them relatively easy to follow (and therefore modify). Most of the programs make extensive use of random disk files, and can be used as a tutorial for this purpose.

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#### PRINTER

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FROM XLENCE SOFTWARE

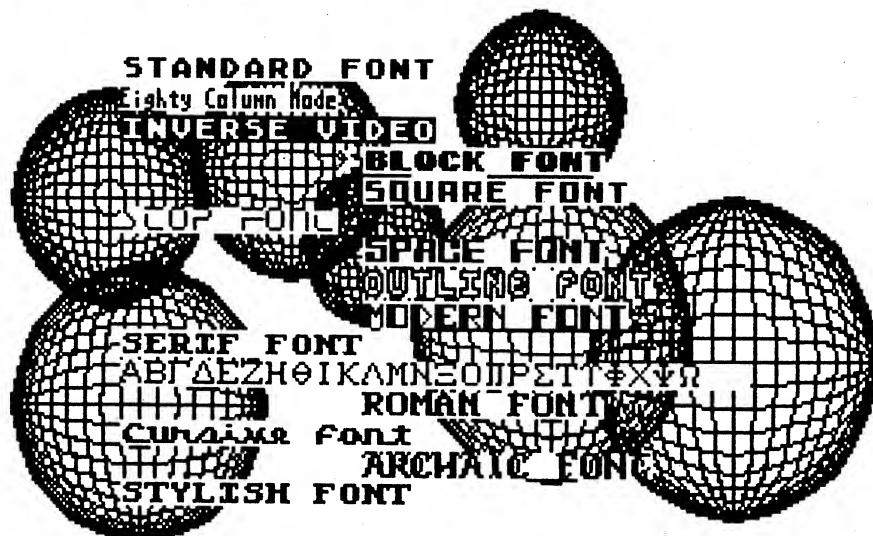


FIGURE 1

**Page Designer**  
Continued from page 151

created with a graphics software package (such as Micro-Painter or MicroIllustrator files converted with an included conversion routine) can be loaded into Page Designer and placed on the top or bottom half of the page. You can then add text to this illustration in various type styles as you please. The illustration, as well as any text, can be moved left or right one text-height line at a time by using the insert and delete keys. However, there is no way to move the image up and down, which is a shame; the program does not respond to the SHIFT-INSERT and the SHIFT-DELETE key combinations. Moving the screen up or down would not have required any overwhelming programming effort, yet would have given the user an enormously useful feature. As it is now, an illustration which starts at the top of the screen cannot be moved down if you wanted to add text above it.

**Adding Text**

Text is positioned on the screen using the conventional Atari editing system, except the SHIFT-INSERT and SHIFT-DELETE key combinations

are not recognized, as mentioned previously.

To change the type style, a new character set must be loaded in. You can either specify the name of the file containing the character set you want, or you can select a font while directory entries are printed out one at a time. Once a new character set is loaded in, all subsequently typed characters appear in the new type style. Whereas The Print Shop offers large characters in a variety of sizes, Page Designer only offers small sized characters in two sizes: 40 or 80 characters per line. The 80 character per line mode basically compresses the characters. While the documentation admits that the 80 characters per line mode looks blurry on the screen, it says nothing about how ugly the compressed characters look on the printed page. I would recommend sticking to the 40 character per line mode if you want legible text.

**Special Graphics**

A special graphics font can be activated with a control command. This character set contains characters that may be linked together to form pat-

Continued on page 156

## TeleVideo Portable Computer Special

### A \$1,600<sup>°</sup> value for only \$795

Purchase the Televideo TPC1, a full-featured portable computer, now and save more than \$800.00. The TPC1 comes standard with software that includes CP/M 2.2 as the operating system, (upgradable to CP/M+), plus *TeleWrite* (executive word processor), *TeleCalc* (spreadsheet), *TeleChart* (business graphics), and *Uniform* (a diskette compatibility program). The TPC1 also features a nine inch screen, two double sided double density slim-line disk drives providing 737K bytes of storage capacity, 64K of user memory (expandable to 128K), printer ports (centronics and RS232C), modem port, RJ11C SuperMouse port and much more to give you a complete business and word processing system.



Because it is a CP/M based system, there are hundreds of application programs and language compilers available to run on this system. In addition, Trailing Edge has made available *Uniform*, a program that allows you to use the TPC1 with a variety of personal computer formats (including IBM PC and MSDOS) and be free to exchange data and program disks with other computers without compatibility problems.

The TPC1 is sold complete with a 90 day parts and labor warranty and is fully supported by Trailing Edge's Technical Support division. So contact us today to learn more about the power and capabilities of the TPC1, at \$795.00, the supply won't last long.

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**Page Designer**  
Continued from page 154

terns, borders, screen designs, etc. The only problem with linking these characters is that the screen lines are spaced one scan line further apart than they should be. The result is that "connected" characters appear disconnected. The only way around this is to continuously use two other commands which move the text cursor one scan line above or below its current position, but this is time-consuming and nerve-racking, especially if you planned to put these characters over a wide area of the screen.

**Graphics Mode**

Another mode of this pro-

gram allows you to use the joystick to make free-hand drawings on the screen. Line, circle and sphere drawings are supported, but that's all. Furthermore, you can't draw a line, circle or sphere from the top half of the page to the bottom, or vice versa. This could be a serious limitation if you planned to do lots of drawing in the middle of the screen. Using a separate graphics program is of no help in this regard since only one half of the screen is created at a time. You can, of course, switch between top and bottom screens and carefully plan out how they will connect, but this is probably more trouble than it's worth.

Page Designer could have solved these problems by using a scrolling screen that would

allow you to scroll up and down the page and draw, type and load screens anywhere along the way. This would have been an excellent and handy feature.

**The Printed Page**

Figure 1 shows an example of a page created with Page Designer. Note the wide variety of type styles. The small print size enables more text to fit on the page, however it also means that each character is composed of fewer pixels. The result is that Page Designer's graphics seem more "chunky." That is, the individual pixels composing each character are more visible.

Continued on page 160

## First Gem Applications From Digital Research Bring Graphic Interface To IBM PC Software Packages

Digital Research Inc. announced its first end-user application programs that take full advantage of the Graphics Environment Manager (GEM) operating system extension—GEM Desktop and GEM Draw. The company also announced two new GEM software applications—GEM Paint and GEM Write—which will be bundled as the GEM Collection with GEM Desktop.

GEM Desktop and GEM Draw bring to the entire line of IBM Personal Computers and compatibles drop-down menus, windows, icons and support for a mouse pointing

device, ideas pioneered on the Xerox Star and popularized on the Apple Lisa and Macintosh. Other GEM-based programs will be announced by Digital Research in the third and fourth quarters of 1985.

"Now that applications with the GEM user interface are available, those who do not want to learn the complicated commands that typify the majority of IBM PC applications will be able to use personal computers," said John Rowley, president of Digital Research. "With these applications, we are beginning to open up the personal computing world to all of business America."

**GEM Desktop**

GEM Desktop eliminates the need to learn complex operating system commands by replacing them with a visual and intuitive interface. On machines equipped with GEM and GEM Desktop, a graphical representation of a desktop equipped with disks, a waste basket and folders appears. Simply by moving the mouse and clicking the mouse button, or by making simple key strokes, the user can open a file, run a software program, delete a file or do anything else possible under the operating system.

Up to six GEM Desktop accessories, such as a calculator or a clock, can run with other GEM applications.

**GEM Collection**

For those wishing to try out a range of GEM applications, Digital Research offers the GEM Collection. The GEM Collection includes GEM Desktop, GEM Paint, an on-screen graphics design tool, and GEM Write, a full-function word processor.

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**Page Designer**  
Continued from page 156**Documentation**

I was sent "Preliminary Documentation" with this program, which means that I had to figure out how to use several of the commands by myself. Hopefully, the final documentation will be better written and more complete. Since I don't have the actual documentation, I am not including a rating for this category.

**Conclusions**

Page Designer is a handy

utility, particularly useful for merging your own graphics and text and when lower-case characters are essential. For designing signs, greeting cards, stationery, and other items where large, highly readable print is desired, I would still recommend The Print Shop. User-friendliness is where Print Shop really excels over Page Designer. Indeed, the creators of The Print Shop have done such a magnificent job with its user interface that Page Designer seems clumsy, complicated and tedious in comparison. Hence, the neophyte

Atari user would find himself much more comfortable using Print Shop than Page Designer. For the more experienced, though, Page Designer has features that make it an attractive package in itself.

**Requires:**

Atari 400/800/XL/XE  
1 Joystick

**Program Author:**

Dennis Young and  
Len Dorfman

Price: \$29.95

**Warranty:**

90 days, free replacement

**Manufacturer:**

XLENT Software  
P.O. Box 5228  
Springfield, VA 22150

**Ratings For Page Designer**

\*POOR, \*\*FAIR, \*\*\*GOOD,  
\*\*\*\*EXCELLENT

**Program Design** \*\***Practicality** \*\*\***Value** \*\*\*

Average \*\*1/2

**New Modem** Continued from page 158**Technical Specifications**

**Data Format:** Asynchronous binary serial transmission

**Operation:** Slow Speeds: FULL duplex

Fast Speeds: Adaptive Duplex

**Data Rates:**

Slowest Speed: 300 bps

Slow Speed: 1200 bps

Fast Speed: Up to 10,000 bps or faster, depending on line quality.

**Compatibility:** Bell 103 and 212A mode in Slow Speeds.

Any Packetized Ensemble Modem in Fast Speeds.

**Standard Character Format:**

10 bits-1 start, 8 data or 7 data plus parity, 1 stop

**Interface:** IBM PC (or compatible) BUS

Slowest Speed: FSK

Slow Speed: DPSK

Fast Speed: Dynamically Adaptive Multicarrier Quadrature Amplitude Modulation (DAMQAM)

**Frequencies:**

300 bps Tx Freq. Rx Freq.

Originate mode: 1070 Hz = space 2025 Hz = space

1270 Hz = mark 2225 Hz = mark

Answer mode: 2025 Hz = space 1070 Hz = space

2225 Hz = mark 1270 Hz = mark

1200 bps Tx Freq. Rx Freq.

Originate mode: 1200 Hz 2400 Hz

(carrier) (carrier)

Answer mode: 2400 Hz 1200 Hz

(carrier) (carrier)

**Receiver Sensitivity:**

0 to -45 dBm

**Frequency Offset:**

Can tolerate up to ± 7 Hz (either FAST or 212A mode)

**Power Requirements:**

+5 VDC ± 10% at 2.5 Amp. maximum

-5 VDC ± 10% at 0.1 Amp. maximum

+12 VDC ± 10% at 0.1 Amp. maximum

-12 VDC ± 10% at 0.1 Amp. maximum

**FCC Compliance:**

Meets requirements of FCC Part 68 direct interface and Part 15, Subpart J, Class B device

**Temperature:**

Operating: 10 degrees C to 50 degrees C

Storage: -40 degrees C to 65 degrees C

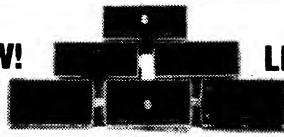
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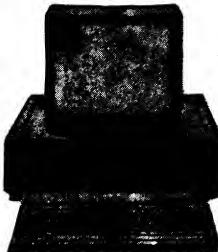
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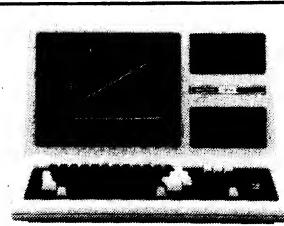
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